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SA/PC

INTELLIGENCE MEMORANDUM

PRODUCTION AND UTILIZATION OF COTTON
IN THE SOVIET BLOC
1952

CIA/RR IM-373

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CIA/RR IM-373
(ORR Project 21.5.1)

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PRODUCTION AND UTILIZATION OF COTTON IN THE SOVIET BLOC*
1952

Summary

Cotton yields in the Soviet Bloc have not entirely recovered from the effects of World War II. The average yield per hectare is well below the prewar average yield over the same area. Although 1951 production, estimated at 5.1 million metric tons, raw basis,** slightly exceeded 1938 production in the same area, this achievement was made possible only by an increase of nearly one-fifth in acreage. Most of the additional acreage is marginal land. In 1952, as a result of adverse weather conditions, Soviet Bloc production dropped about 10 percent, to 4.6 million metric tons, which is less than the area produced in 1938.

Cotton production in the USSR in 1952, which was about 7 percent greater than 1938 production in the same area, accounted for about 59 percent of total Soviet Bloc production. Production in China in 1952, which was about 21 percent less than 1938 production, accounted for about 39 percent of total Soviet Bloc production. Production in the European Satellites, which has greatly increased since World War II, still accounted for only 1.6 percent of Bloc production in 1952.

All cotton-growing Soviet Bloc countries have plans for increases in cotton acreage and total production. On the whole, the implied increase in Bloc cotton production appears unattainable. The Soviet Fifth Five Year Plan (1951-55) is designed to gain self-sufficiency in production of raw cotton for both internal and Satellite needs.

* This memorandum contains information available as of 31 March 1953. The data in this report do not represent measured quantities but are estimates and approximations. The range of fluctuation in estimates is no less than plus or minus 10 percent.

** All estimates given in this memorandum are on a raw cotton basis unless otherwise indicated. Raw cotton consists of both seed and fiber. All data referred to are contained in Appendix A unless otherwise indicated.

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The planned 63-percent increase over 1952 production figures in the USSR appears unattainable, since cotton acreage in the USSR is rapidly approaching climatic limits and improved methods of cultivation cannot increase yields as rapidly as planned. Actual cotton production in the USSR is expected to remain at about 1952 levels until irrigated cotton acreage in the southern regions of European USSR is developed.

Cotton production in the Soviet Bloc countries is insufficient to fulfill present civilian and military requirements for manufactured cotton products. It is believed that rather than trying to obtain self-sufficiency in cotton production through the further use of marginal lands, the Bloc probably will continue to import the required quantity of cotton from non-Bloc countries.

Analysis of the 1952 figures for Soviet Bloc cotton production, imports, and utilization indicates that about 52,000 metric tons, ginned basis,* became available in 1952 for additions to Bloc stock.

1. Postwar Trends in Production.

Cotton production in the Soviet Bloc has more than doubled since the low point reached in 1944, when production in those areas now constituting the Bloc fell to about 2.1 million metric tons. In 1951, production reached 5.1 million metric tons. Cotton production in the same area in 1938, the peak prewar year, was 4.9 million metric tons.

Cotton acreage in the Soviet Bloc has increased steadily since the end of World War II. It was estimated at 6.97 million hectares at the beginning of 1951, about a 17.8-percent increase over the prewar acreage of 5.9 million hectares.

In spite of efforts in the Soviet Bloc to increase cotton production since the end of World War II, yields are still below the prewar level. Most of the increased plantings have been on marginal land, and the adverse factors brought about by World War II have not

* Ginned basis refers to cotton fibers after separation from the seeds.

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as yet been fully corrected. The 1952 production of 4.6 million metric tons is estimated to yield about 6.6 metric centners per hectare* as compared with the 1951 yield of 7.3 centners and a prewar yield of 8.3 centners per hectare.

Cotton yields suffered severely during World War II, since the high priority given to food production resulted in a de-emphasis in cotton production. Yields per hectare in the irrigated areas of the USSR dropped from 15.4 centners in 1938 to 8.2 centners during World War II because of such factors as negligence in breeding, reduction in the use of fertilizers, and poor cultivation and management practices. The yield per hectare in the irrigated areas of the USSR in 1952 averaged about 14 centners per hectare.

2. 1952 Production.

Cotton production in the Soviet Bloc countries in 1952 is estimated at 4.6 million metric tons, a decrease of approximately 511,000 metric tons (10 percent) from the 1951 production of 5.1 million metric tons. The 1952 cotton acreage in the Bloc is estimated at 6.95 million hectares, less than a 1-percent decrease as compared with 1951 totals, and about a 17.8-percent increase over the prewar acreage of 5.9 million hectares. In 1952, cotton acreage in all sectors of the Bloc except Communist China exceeded or equaled both the prewar and the 1951 acreage. The 1951 Chinese acreage exceeded the 1952 acreage by about 5.1 percent.

a. USSR.

Cotton production in the USSR for 1952 is estimated at 2.7 million metric tons, a 12.5-percent decrease as compared with the 3.1 million metric tons produced in 1951, but a 7.3-percent increase over the 2.5 million metric tons produced in 1938. The USSR is estimated to have produced about 58.7 percent of the total Soviet Bloc cotton production of 4.6 million metric tons during 1952.

* All references to centners in this memorandum are to the metric centner, which equals 100 kilograms, or 220.46 pounds. A hectare equals 2.471 acres.

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Since cotton is a sensitive plant, indigenous to warm climates, its production is concentrated in the six southernmost economic regions* of the USSR. Three of these regions, where inadequate rainfall is supplemented by irrigation, account for the bulk of Soviet cotton production.

All of the irrigated long-staple cotton produced in the USSR is grown in the three regions mentioned above, which are in the extreme southern part of Asiatic USSR: (1) Central Asia, (2) the southern part of Kazakhstan, and (3) the Transcaucasus. These three regions of Asiatic USSR have increased in relative importance as cotton-growing areas since the prewar period. In 1952, cotton production in Asiatic USSR is estimated at about 92.6 percent of the total Soviet production. The Central Asia and Kazakhstan regions are estimated to produce 84.1 percent and the Transcaucasus Region 8.5 percent of all Soviet cotton production.

Practically all of the nonirrigated short-staple cotton produced in the USSR is grown in the three southernmost regions of European USSR. It is estimated that in 1952 the South Region produced about 100,000 metric tons (50 percent) of the 200,000 metric tons produced in European USSR; the Southeast Region, 89,000 metric tons (44.5 percent); and the Volga Region,** about 10,800 metric tons (5.5 percent). These three regions of European USSR have declined in importance as cotton-growing areas since the prewar period. During the prewar period, European USSR produced 8.8 percent (about 221,000 metric tons) of the country's cotton. During World War II, cotton production was virtually discontinued in European USSR in favor of the more urgently needed food crops. Although efforts to increase cotton production during the postwar period have been made, it is estimated that 1952 cotton production in European USSR is only 7.4 percent (200,000 metric tons) of the total Soviet production, even though 37.9 percent (1.1 million hectares) of the country's cotton acreage (2.9 million hectares) is in this area.

b. Communist China.

The 1952 cotton production in Communist China is estimated at about 39.1 percent (1.8 million metric tons) of the total Soviet Bloc

* The term region in this report refers to the economic regions defined and numbered on CIA Map 12048.1, 9-51 (First Revision, 7-52), USSR: Economic Regions:

** Stalingrad and Astrakhan oblasts.

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production. Production has dropped markedly under the 1938 figure of 47.8 percent (2.3 million metric tons).

Although the Chinese cotton acreage of 3.9 million hectares in 1952 is estimated to be about 3 percent greater than the prewar acreage of 3.8 million hectares, the 1952 production of 1.8 million metric tons is estimated to be 21.3 percent less than the prewar production figures. Thus the 1952 yield of 4.72 centners per hectare is estimated to be about 23.5 percent less than the prewar yield of 6.17 centners per hectare. This 1952 Chinese yield (4.72 centners) is about 49.5 percent less than the Soviet yield of 9.35 centners per hectare and 22.6 percent greater than the yield of 3.85 centners per hectare in the European Satellites.

c. European Satellites.

The European Satellites have increased in relative importance as a cotton-growing area since the prewar period. It is estimated that in 1952 the European Satellites will produce about 1.6 percent (74,000 metric tons) of the cotton in the Soviet Bloc countries as compared with less than one-half of 1 percent (23,000 metric tons) in 1938.*

Bulgaria produces about 53.1 percent (39,000 metric tons) of the cotton in the European Satellite countries; Rumania, 30.6 percent (23,000 metric tons); and Hungary, about 16.3 percent (12,000 metric tons). During the prewar period, Bulgaria produced about 97 percent (34,000 metric tons) of the cotton in the European Satellites, Rumania produced about 3 percent (1,000 metric tons), and Hungary produced none.

3. Planned Production.

Planned cotton production in the Soviet Bloc is estimated at about 6.9 million metric tons, raw basis, an increase of approximately 1.8 million metric tons (35 percent) over the 1951 total. The 1955 planned production of 6.9 million metric tons would exceed the prewar production of 4.9 million metric tons by about 2 million metric tons (40.8 percent). This goal is considered to be unrealistic.

* Figures based on present (1952) boundaries.

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a. USSR.

The Fifth Five Year Plan of the USSR is directed toward attaining self-sufficiency in raw cotton production for internal and Satellite needs. The Plan, covering the years 1951-55, envisions that gross cotton production will increase in this span of years by 55 to 65 percent. This Plan includes extension of the irrigation network, reclamation of other lands, and extension of production in the non-irrigated sections of European USSR. Attainment of this goal, however, is to be achieved mainly by increasing yields through use of better varieties, better rotations, and increased use of fertilizer.

The Soviet 1955 Plan envisions an increase in acreage to 3.1 million hectares, about 6.9 percent above the 1952 acreage of 2.9 million hectares, and an increase in production to 4.4 million metric tons, a 63-percent increase over the 1952 production of 2.7 million metric tons. Both the acreage and production goals appear to be unattainable. The acreage in cotton is rapidly approaching climatic limits, though slight increases may be made in that direction. Yields can be increased slightly by use of improved varieties, more fertilizers, better crop rotations, and improved methods of cultivation. These increases, however, will not be sufficient to accomplish the announced goal.

The Plan estimates an increase in production of irrigated cotton in Asiatic USSR to 4.1 million metric tons, an increase of 61 percent as compared with the 1952 production of 2.5 million metric tons. To attain this enormous increase will require a yield increase of about 21.4 centners per hectare in 1955, a 54-percent increase over the 1952 yield of 13.9 centners per hectare. Such an enormous increase in yield during a 3-year period is improbable.

The Plan calls for an increase in acreage in the nonirrigated European USSR area to about 1.2 million hectares, a 9.2-percent increase as compared with the 1.1 million hectares in 1952. It is planned that production be increased to 326,000 metric tons, a 63-percent increase over the 1952 production of 200,000 metric tons. Yields of 2.74 centners per hectare for this area are expected to be so low that, even if the planned production is accomplished, the increase of 126,000 metric tons over the 1952 production of 200,000 metric tons would account for about 3 percent of the total planned production (4.4 million metric tons). Plans are underway to produce

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irrigated cotton in the southern regions of European USSR. Little progress, however, can be made on this project prior to 1955.

It is likely that the Soviet cotton acreage will tend to remain at about the 1952 level (2.9 million hectares) and that Soviet cotton production, if increased by better yields, will not be greatly increased. It is conceivable that no gains in production would be made by 1955 if adverse weather comparable to that in 1952 were encountered during the next 3 years. In 1952, even though acreage was increased by 200,000 hectares as compared with the 1951 acreage of 2.7 million hectares, adverse weather caused production to drop by 385,000 metric tons (12.5 percent).

b. Communist China.

Plans for cotton production in Communist China do not extend to 1955. The Chinese Plan for 1953 estimates an increase in cotton production to 2.1 million metric tons, about 16 percent over the 1952 production of 1.8 million metric tons. It is planned that this increase be accomplished primarily by increasing the yield per hectare. Such a large increase in yields, in 1 year, is unrealistic.

c. European Satellites.

Like the USSR, the European Satellites are limited in their ability to expand cotton production on a practicable basis. With the exception of small areas in Bulgaria, there are only limited opportunities for expanding cotton production.

The 1955 Rumanian Plan projects an increase in cotton production to 230,000 metric tons, which would be more than 10 times the 1952 level of 22,500 metric tons. It is believed that such an enormous increase cannot be accomplished during the next 3 years.

Hungary plans to increase cotton acreage to 115,000 hectares by 1954, about 4 times the 1952 acreage of 29,000 hectares. Based on 1952 yields of 4.2 centners per hectare, this planned acreage in Hungary would result in a production of 47,900 metric tons. It is believed that these planned increases cannot be attained. Even if the acreage is increased to the planned level, it is unlikely that yields can be maintained at the 1952 level (4.2 centners per hectare) on the marginal land used to produce cotton.

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Bulgaria plans to increase cotton production to 60,000 metric tons in 1952, or about 53.8 percent above the 1952 level of 39,000 metric tons. This planned increase is probably higher than can be attained in 1 year.

4. Current Utilization.

Current utilization of cotton in 1952 in the Soviet Bloc, as shown in Table 1, is estimated at 4,715.5 million metric tons, raw basis, an amount slightly exceeding the indigenous production of 4,600.5 million metric tons.

Table 1
Current Utilization of Cotton in the Soviet Bloc
1952

<u>End User</u>	<u>Quantity (Thousand Metric Tons)</u>	<u>Percent</u>
Agriculture	399.4	8.5
Household	3,293.1	69.8
Military	404.3	8.6
Industry	618.7	13.1
Total	<u>4,715.5</u>	<u>100.0</u>

The difference between domestic consumption and production in 1952 was more than offset by net* imports from the West of 270,900 metric tons,** raw basis (or 90,300 metric tons, ginned basis***) -- 139,500 metric tons to Communist China and 131,400 metric tons to the European Satellites. Communist China's imports from non-Bloc countries (principally from Pakistan) approximately balanced the

- * Small quantities of cotton are exported from the Soviet Bloc.
 ** An additional 155,900 metric tons is left available for accretion and stocks. The cotton would be ginned prior to storage.
 *** The weight of ginned cotton is approximately one-third that of raw cotton.

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deficiency in China's domestic production. The European Satellites, in addition to imports from non-Bloc countries, received about 537,000 metric tons from the USSR.

As is evident from the above pattern of Soviet Bloc trade in cotton, the USSR produces a large surplus above its own current requirements. Although Bloc plans call for large enough increases in cotton production to make the Bloc self-sufficient in cotton and although increased efficiency is expected to account for part of the planned increase, the cost of the additional cotton produced would probably average much higher than cotton imported from non-Bloc countries. It therefore appears probable that the Bloc will continue, at least for some years, to rely on imports to balance its requirements rather than to force the expansion of production on marginal land, as would be necessary were attempts made to meet the planned production goals on schedule.

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APPENDIX A

COTTON ACREAGE AND PRODUCTION IN THE SOVIET BLOC a/*
1938, 1951, 1952, AND PLANS

Table 2

Area	1938 c/			1951			1952 b/			Plans d/	
	Hectares (Thousand Units)	Production (Thousand Metric Tons)	Hectares (Thousand Units)	Production (Thousand Metric Tons)	Hectares (Thousand Metric Tons)	Percent by Areas	Production (Thousand Metric Tons)	Percent by Areas	Hectares (Thousand Units)	Production (Thousand Metric Tons)	
<u>European USSR (Nonirrigated Cotton)</u>											
South (Ukraine and Moldavia) (Region III)	512.7	220.5	477.5	104.9	545.9	18.9	99.9	3.7	596.1	162.8	
Southeast (Lower Don and North Caucasus) (Region IV)			434.5	95.6	485.4	16.8	89.1	3.3	530.1	145.2	
Volga (Region VI)			52.0	12.3	55.7	1.9	10.8	0.4	60.8	17.6	
Subtotal	512.7	220.5	964.0	212.8	1,087.0	37.6	199.8	7.4	1,187.0	325.6	
<u>Asiatic USSR (Irrigated Cotton)</u>											
Transcaucasus (Region V)	214.5	250.0	175.0	277.7	175.0	6.1	229.5	8.5	184.7	374.0	
Kazakhstan (Region Xa)	110.2	121.2	107.0	117.2	107.0	3.7	97.2	3.6	112.9	158.4	
Central Asia (Region Xb)	1,245.5	1,925.4	1,441.2	2,477.3	1,518.2	52.6	2,173.5	80.5	1,602.6	3,542.0	
Subtotal	1,570.2	2,296.6	1,723.2	2,872.2	1,800.2	62.4	2,500.2	92.6	1,900.2	4,074.4	
Total USSR	2,082.9	2,517.1	2,687.2	3,085.0	2,887.2	100.0	2,700.0	100.0	3,087.2	4,400.0	

* Footnotes for Table 2 follow on p. 12.

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Table 2
(Continued)

Area	1938 c/			1951			1952 b/			Plans d/	
	Hectares (Thousand Units)	Production (Thousand Metric Tons)	Hectares (Thousand Units)	Production (Thousand Metric Tons)	Hectares (Thousand Metric Tons)	Percent by Areas	Production (Thousand Metric Tons)	Percent by Areas	Hectares (Thousand Units)	Production (Thousand Metric Tons)	Hectares (Thousand Units)
European Satellites											
Bulgaria	33.5	22.8	82.5	37.2	82.5	43.2	39.0	53.1	126.9	60.0	
Hungary			28.8	8.1	28.8	15.1	12.0	16.3	115.0	47.9	
Romania	0.9	0.5	79.6	22.5	79.6	41.7	22.5	30.6	300.0	230.0	
Total European Satellites	34.4	23.3	190.9	67.8	190.9	100.0	73.5	100.0	541.9	337.9	
China e/	3,763.0	2,322.3	4,087.5	1,929.0	3,866.2	100.0	1,827.0	100.0	3,866.2	2,119.3	
Total Soviet Bloc	5,880.3	4,862.7	6,965.6	5,111.8	6,945.0		4,600.5		7,496.0	6,857.2	

a. For sources of information used in this table, see Appendix B.

b. Preliminary.

c. Based on present boundaries.

d. The planned data used in this table are based on the following Plans: USSR, the 1955 Plan; Rumania, the 1955 Plan; Hungary, the 1954 Plan; and Bulgaria and China, the 1953 Plan.

e. The Chinese data include Manchuria but do not include Outer Mongolia.

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APPENDIX B.

SOURCES

All data relating to cotton acreage and production, except for the sources noted below, are based on estimates made by CIA and by the Office of Foreign Agricultural Relations (OFAR), US Department of Agriculture. These estimates, in turn, are based on Soviet statistics collated and used in previously published CIA and OFAR reports.

The Rumanian Plan is based on the Report of Charge d'Affaires, American Legation, Bucharest, Rumania, 26 Dec 1950, on Rumania's Five Year Plan; the Hungarian Plan, on FBIS No. 173, 29 Aug 1951; and the Bulgarian Plan, on the production plan given in FBIS No. 139, 16 Jul 1952. C.

The Chinese Plan is based on Communist China's Five Year Plan, as stated in Premier Chou En-Lai's report to the fourth session of the First National Committee of the Chinese People's Political Consultative Conference on 4 Feb 1953.

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